

WHAT IS CLAIMED IS:

1. A control apparatus for controlling a digital video apparatus by using Universal Serial Bus (USB), comprising:

- 5        a storage unit for storing a control program for controlling a first judgment step of judging whether a response to a first request for requesting to change a status of the digital video apparatus to a predetermined status is an ACK or not,
- 10        a second judgment step of judging, if the response is the ACK, whether notification information notifying to the control apparatus that the status of the digital video apparatus changes before a lapse of a predetermined time is received or not, and
- 15        a transmission step of transmitting, if the notification information cannot be received before the lapse of the predetermined time, a second request for requesting for information representative of the status of the digital video apparatus to the digital video
- 20        apparatus; and
- a control unit for executing the control program.

2. The control apparatus according to claim 1, wherein the control apparatus is adapted to transmit

25        the first and second requests to the digital video apparatus via a control pipe in conformity with USB.

3. The control apparatus according to claim 1,  
wherein the control apparatus is adapted to receive the  
notification information via an interrupt pipe in  
conformity with USB.

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4. The control apparatus according to claim 1,  
wherein the control apparatus is adapted to acquire the  
predetermined time from descriptor information of the  
digital video apparatus.

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5. A method for a control apparatus which  
controls a digital video apparatus by using Universal  
Serial Bus (USB), comprising steps of:

judging whether a response to a first request for  
15 requesting to change a status of the digital video  
apparatus to a predetermined status is an ACK or not;

judging, if the response is the ACK, whether  
notification information notifying to the control  
apparatus that the status of the digital video  
20 apparatus changes before a lapse of a predetermined  
time is received or not; and

transmitting, if the notification information  
cannot be received before the lapse of the  
predetermined time, a second request for requesting for  
25 information representative of the status of the digital  
video apparatus to the digital video apparatus.

6. The method according to claim 5, wherein the control apparatus is adapted to transmit the first and second requests to the digital video apparatus via a control pipe in conformity with USB.

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7. The method according to claim 5, wherein the control apparatus is adapted to receive the notification information via an interrupt pipe in conformity with USB.

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8. The method according to claim 5, wherein the control apparatus is adapted to acquire the predetermined time from descriptor information of the digital video apparatus.

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9. A control apparatus for controlling a digital video apparatus by using Universal Serial Bus (USB), comprising:

20 a storage unit for storing a control program for controlling a first judgment step of judging whether a response to a first request for requesting to change a status of the digital video apparatus to a predetermined status is a STALL or not,

25 a second judgment step of judging, if the response is the STALL, whether notification information notifying to the control apparatus that the status of the digital video apparatus changes before a lapse of a

predetermined time is received or not, and

a transmission step of transmitting, if the notification information cannot be received before the lapse of the predetermined time, a second request for  
5 requesting for information representative of a cause of an error occurred at the digital video apparatus to the digital video apparatus; and

a control unit for executing the control program.

10        10. The control apparatus according to claim 9, wherein the control apparatus is adapted to transmit the first and second requests to the digital video apparatus via a control pipe in conformity with USB.

15        11. The control apparatus according to claim 9, wherein the control apparatus is adapted to receive the notification information via an interrupt pipe in conformity with USB.

20        12. The control apparatus according to claim 9, wherein the control apparatus is adapted to acquire the predetermined time from descriptor information of the digital video apparatus.

25        13. A method for a control apparatus which controls a digital video apparatus by using Universal Serial Bus (USB), comprising steps of:

judging whether a response to a first request for requesting to change a status of the digital video apparatus to a predetermined status is a STALL or not;

judging, if the response is the STALL, whether  
5 notification information notifying to the control apparatus that the status of the digital video apparatus changes before a lapse of a predetermined time is received or not; and

transmitting, if the notification information  
10 cannot be received before the lapse of the predetermined time, a second request for requesting for information representative of a cause of an error occurred at the digital video apparatus to the digital video apparatus.

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14. The method according to claim 13, wherein the control apparatus is adapted to transmit the first and second requests to the digital video apparatus via a control pipe in conformity with USB.

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15. The method according to claim 13, wherein the control apparatus is adapted to receive the notification information via an interrupt pipe in conformity with USB.

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16. The method according to claim 13, wherein the control apparatus is adapted to acquire the

predetermined time from descriptor information of the digital video apparatus.

17. A method for a digital video apparatus
- 5 connectable to Universal Serial Bus (USB), comprising steps of:
- receiving, from a control apparatus, a first request for requesting to change a status of the digital video apparatus to a predetermined status;
- 10 transmitting, to the control apparatus, notification information notifying to the control apparatus that the status of the digital video apparatus changes before a lapse of a predetermined time;
- 15 receiving, from a control apparatus, a second request for requesting for information representative of the status of the digital video apparatus if the notification information cannot be transmitted before the lapse of the predetermined time; and
- 20 transmitting, to the control apparatus, information representative of the status of the digital video apparatus in response of the second request.

18. The method according to claim 17, wherein the
- 25 digital video apparatus is adapted to receive the first and second requests from the control apparatus via a control pipe in conformity with USB.

19. The method according to claim 17, wherein the digital video apparatus is adapted to transmit the notification information via an interrupt pipe in conformity with USB.

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20. The method according to claim 17, wherein the digital video apparatus has a memory which stores descriptor information including the predetermined time.

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21. A method for a digital video apparatus connectable to Universal Serial Bus (USB), comprising steps of:

receiving, from a control apparatus, a first request for requesting to change a status of the digital video apparatus to a predetermined status;

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transmitting, to a control apparatus, notification information notifying to the control apparatus that the status of the digital video apparatus changes before a lapse of a predetermined time;

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receiving, from a control apparatus, a second request for requesting for information representative of a cause of an error occurred at the digital video apparatus if the notification information cannot be transmitted before the lapse of the predetermined time;

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and

transmitting, to the control apparatus, information representative of a cause of an error

occurred at the digital video apparatus in response of the second request.

22. The method according to claim 21, wherein the  
5 digital video apparatus is adapted to receive the first and second requests from the control apparatus via a control pipe in conformity with USB.

23. The method according to claim 21, wherein the  
10 digital video apparatus is adapted to transmit the notification information via an interrupt pipe in conformity with USB.

24. The method according to claim 21, wherein the  
15 digital video apparatus has a memory which stores descriptor information including the predetermined time.